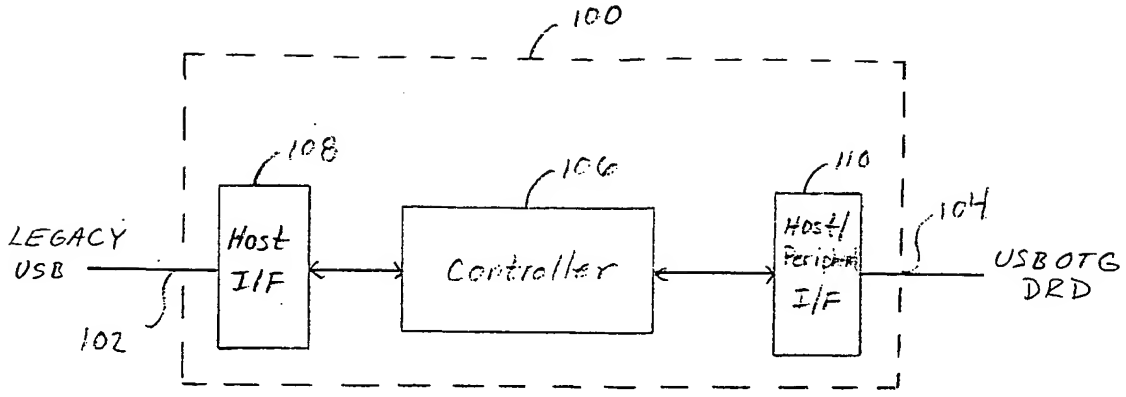
100
108
106
110
LEGACY USB
Host I/F
Controller
Host/ Peripheral I/F
104
USB OTG DRD
102

FIG. 1

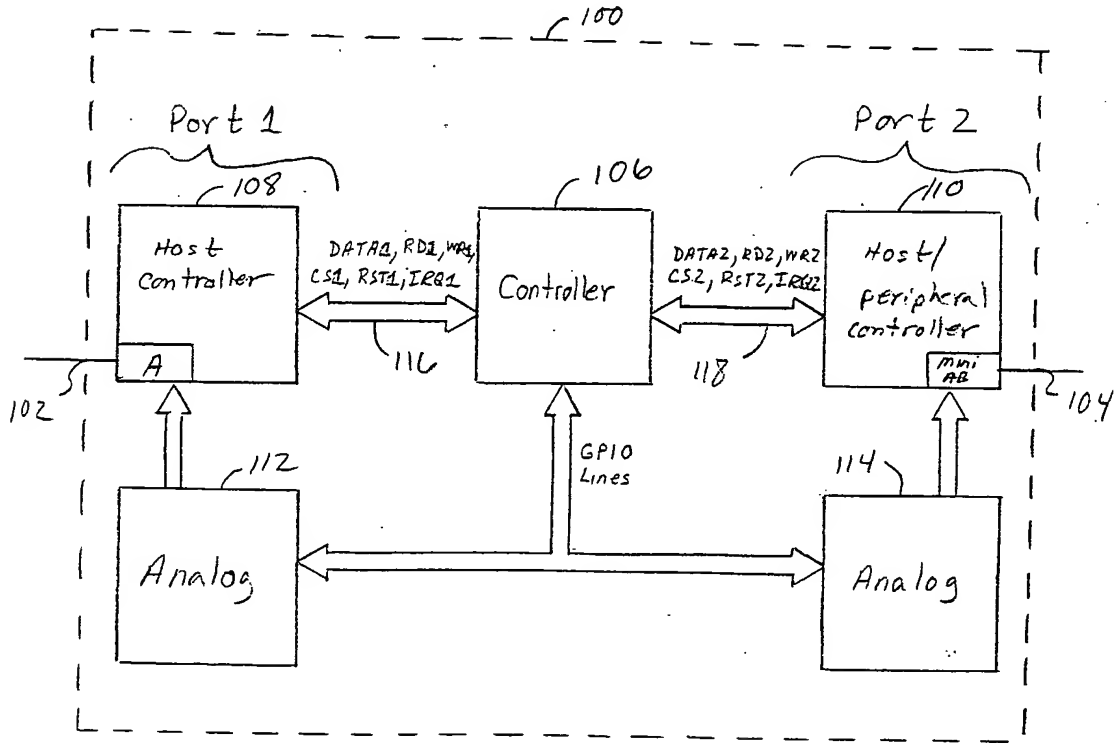
100
Port 1
Port 2
108
106
110
Host Controller
DATA1, RD1, WR1, CS1, RST1, IRQ1
Controller
DATA2, RD2, WR2, CS2, RST2, IRQ2
Host/ peripheral controller
A
mini AB
116
118
102
104
112
GPIO Lines
114
Analog
Analog

FIG. 2

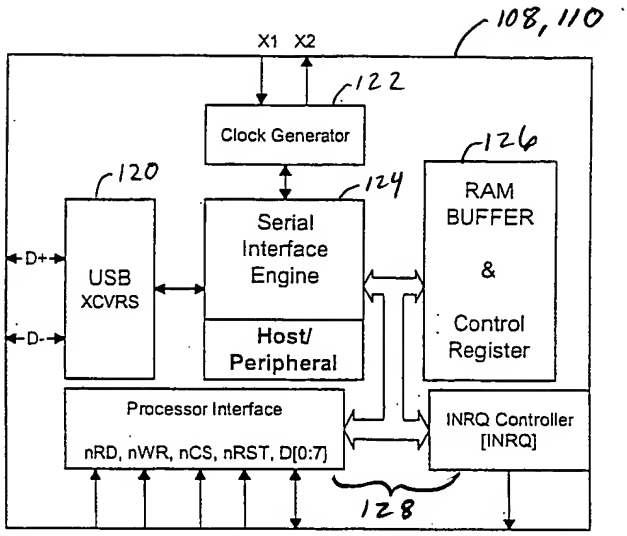
108, 110
X1 X2
122
Clock Generator
126
120
124
RAM
BUFFER
&
Control
Register
D+
USB
XCVRS
D-
Serial
Interface
Engine
Host/
Peripheral
Processor Interface
nRD, nWR, nCS, nRST, D[0:7]
INRQ Controller
[INRQ]
128

FIG. 3

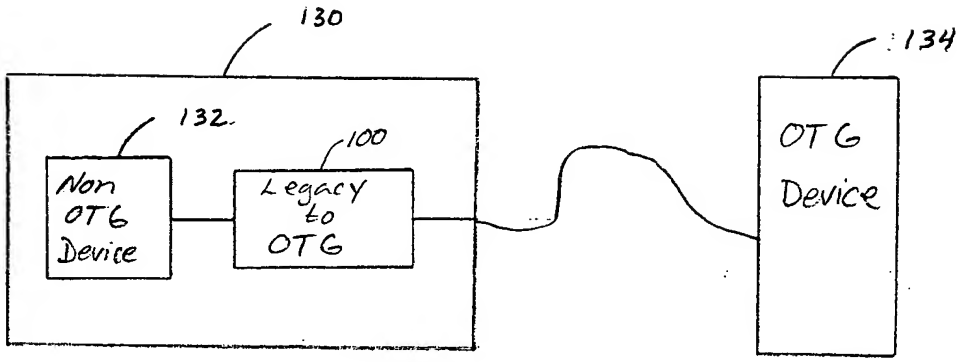
130
134
132
100
Non
OTG
Device
Legacy
to
OTG
OTG
Device

FIG. 4

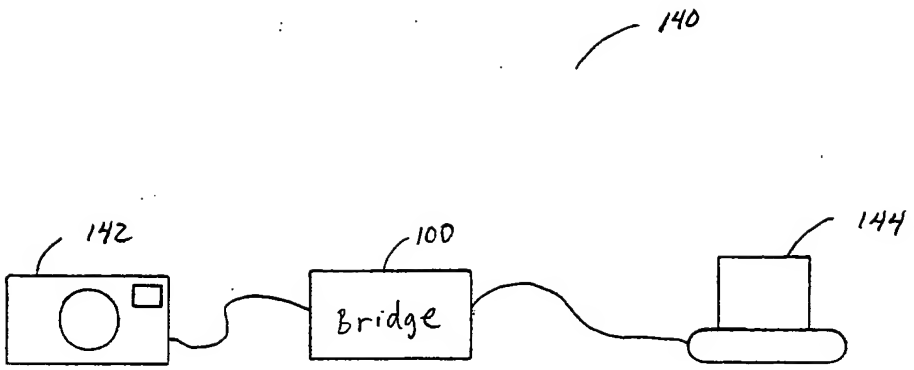
140
142
100
Bridge
144

FIG. 5

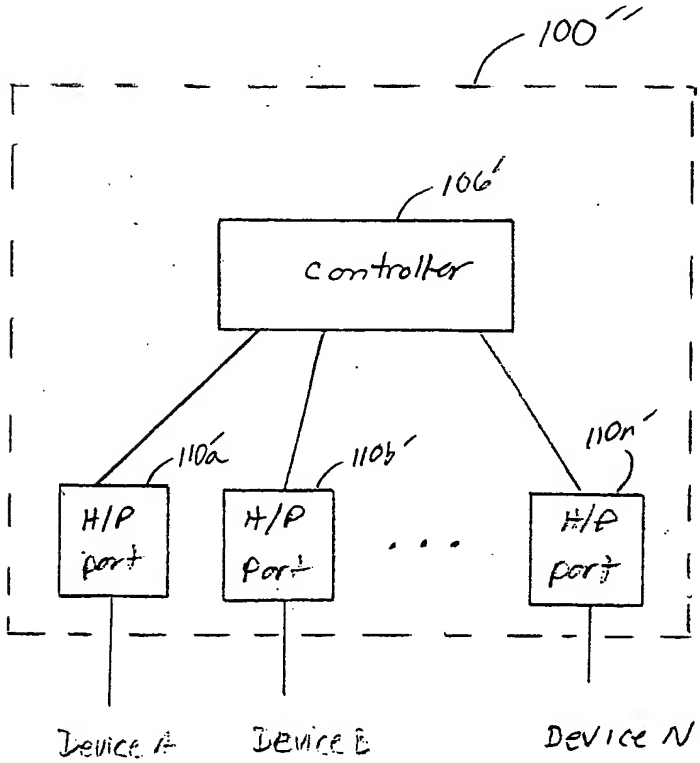
100''
106'
controller
110a'
110b'
110n'
H/P port
H/P port
H/P port
Device A
Device B
Device N

FIG. 6

Docket No. 42390.P10502

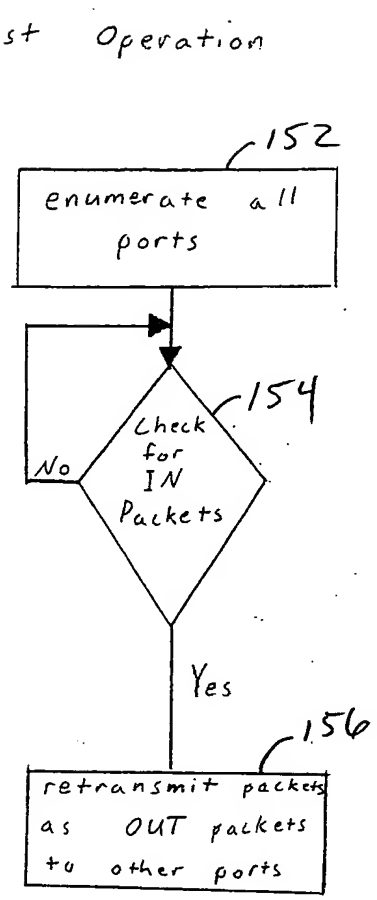

FIG. 7

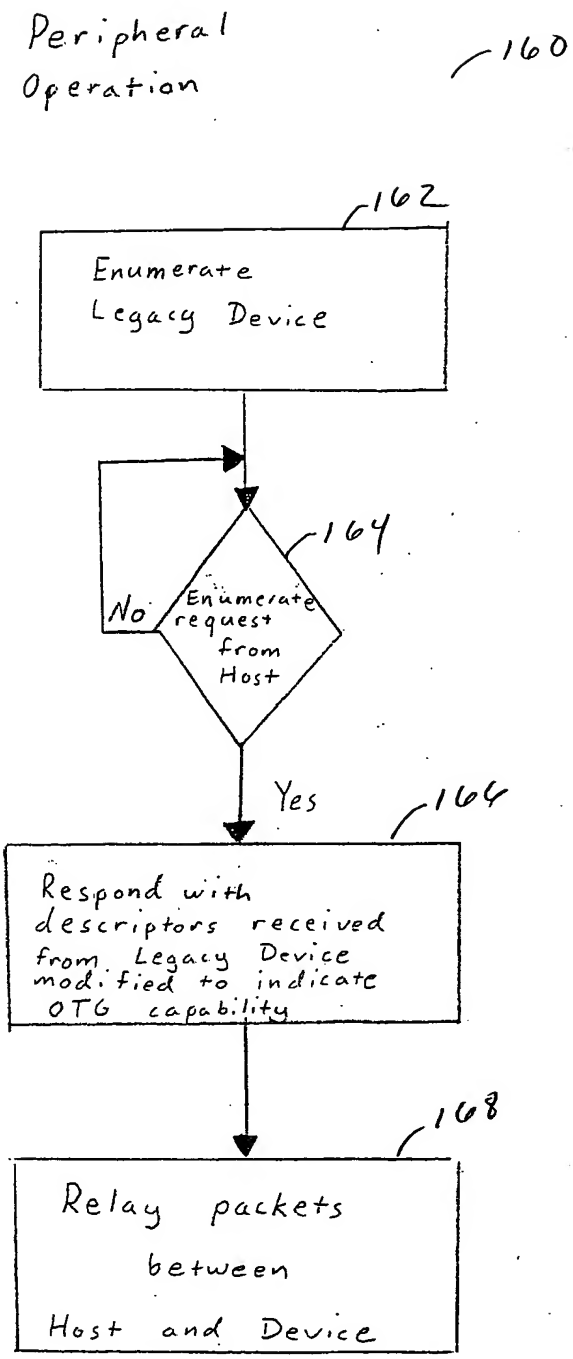
Peripheral Operation
160
162
Enumerate Legacy Device
164
No
Enumerate request from Host
Yes
164
Respond with descriptors received from Legacy Device modified to indicate OTG capability
168
Relay packets between Host and Device

FIG. 8

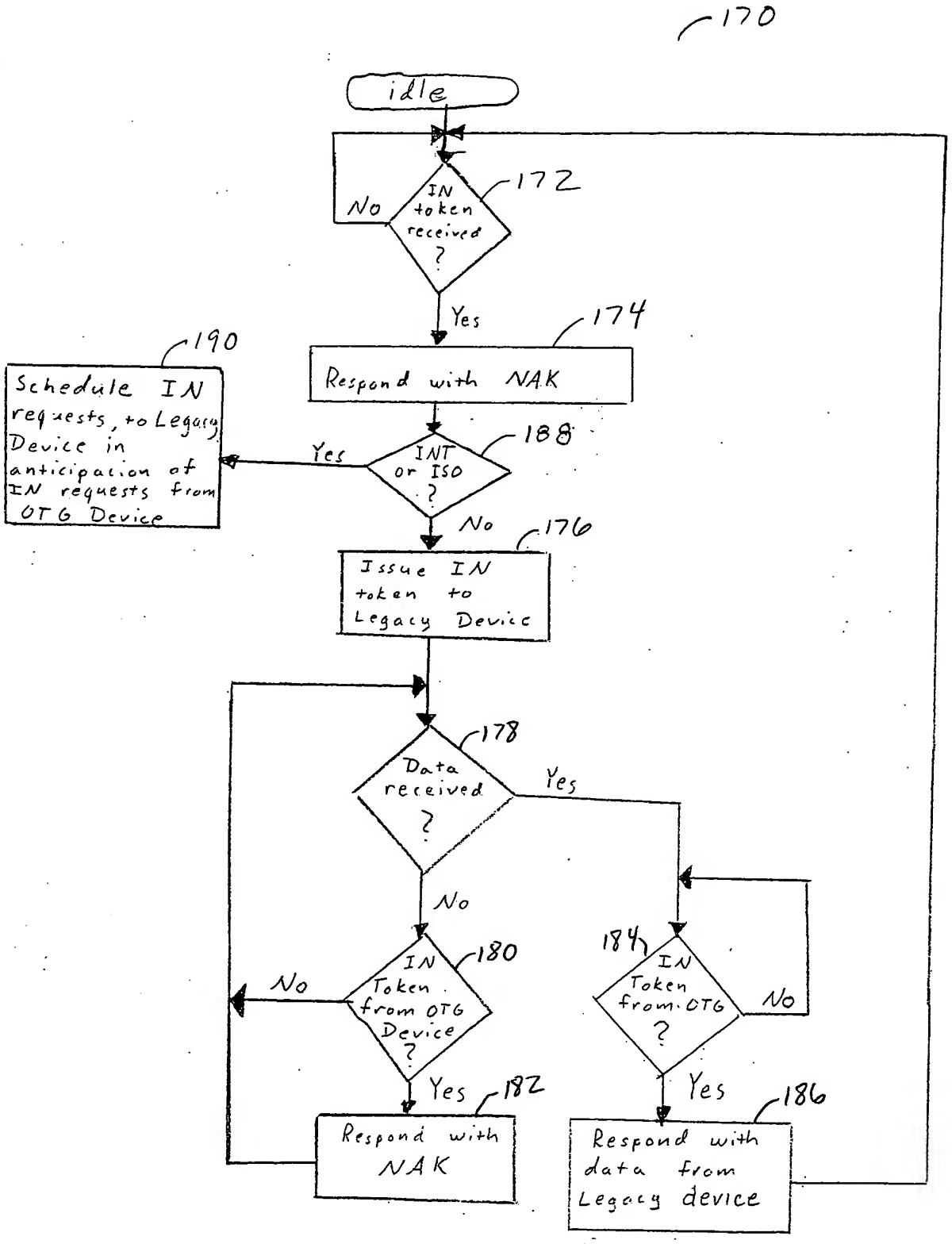
170
idle
172
IN token received ?
No
Yes
174
Respond with NAK
188
INT or ISO ?
Yes
190
Schedule IN requests, to Legacy Device in anticipation of IN requests from OTG Device
No
176
Issue IN token to Legacy Device
178
Data received ?
Yes
No
180
IN Token from OTG Device ?
No
Yes
182
Respond with NAK
184
IN Token from OTG ?
No
Yes
186
Respond with data from Legacy device

FIG. 9